

## Claims

1. A polypeptide selected from the group consisting of the following (a) to (c):
  - (a) a polypeptide comprising an amino acid sequence shown in SEQ ID NO: 2,
  - (b) a polypeptide comprising an amino acid sequence substantially identical to the amino acid sequence shown in SEQ ID NO: 2, and having a pyroglutamyl peptidase activity, and
  - (c) a polypeptide comprising an amino acid sequence wherein one or more amino acid residues are deleted, substituted or added in the amino acid sequence shown in SEQ ID NO: 2, and having a pyroglutamyl peptidase activity.
2. DNA comprising a nucleotide sequence encoding the polypeptide according to claim 1.
3. DNA selected from the group consisting of the following (a) to (c):
  - (a) DNA comprising a nucleotide sequence shown in SEQ ID NO: 1,
  - (b) DNA comprising a nucleotide sequence shown in SEQ ID NO: 5, and
  - (c) DNA which hybridizes with DNA comprising a nucleotide sequence complementary to the nucleotide sequence shown in SEQ ID NO: 1 or 5 under stringent conditions, and comprises a nucleotide sequence encoding a polypeptide having a pyroglutamyl peptidase activity.
4. DNA selected from the group consisting of the following (a) to (c):
  - (a) DNA comprising a nucleotide sequence shown in SEQ ID NO: 3,
  - (b) DNA which comprises a partial sequence of the nucleotide sequence shown in SEQ ID NO: 3 consisting of 100 or more nucleotides and functions as a promoter, and
  - (c) DNA which hybridizes with DNA comprising a nucleotide sequence complementary to the nucleotide sequence shown in SEQ ID NO: 3 under stringent conditions and functions as a promoter.
5. DNA selected from the group consisting of the following (a) to (c):

(a) DNA comprising a nucleotide sequence complementary to a nucleotide sequence shown in SEQ ID NO: 4,

(b) DNA which comprises a partial sequence of a nucleotide sequence complementary to the nucleotide sequence shown in SEQ ID NO: 4 consisting of 15 or more nucleotides, and

(c) DNA which hybridizes with DNA comprising the nucleotide sequence shown in SEQ ID NO: 4 under stringent conditions.

6. The DNA according to any one of claims 2 to 5, wherein DNA is genomic DNA.

7. An oligonucleotide comprising a nucleotide sequence consisting of 15 or more contiguous nucleotides of the nucleotide sequence of the DNA according to any one of claims 2 to 6 or a nucleotide sequence complementary thereto.

8. A recombinant DNA comprising the DNA according to claims 2 or 3.

9. A transformant comprising the recombinant DNA according to claim 8.

10. A process for producing the polypeptide according to claim 1, which comprises culturing a microorganism having an ability to produce the polypeptide in a medium, so as to produce and accumulate the polypeptide in a culture, and recovering the polypeptide from the culture.

11. The process according to claim 10, wherein the microorganism is the transformant according to claim 9.

12. The process according to claim 10, wherein the microorganism is filamentous fungus.

13. The process according to claim 12, wherein the filamentous fungus belongs to one genus selected from a group consisting of *Aspergillus*, *Penicillium*, *Humicola*, *Trichoderma*, *Mucor*, and *Fusarium*.

14. The process according to claim 13, wherein the filamentous fungus belonging to *Aspergillus* belongs to one species selected from a group consisting of *Aspergillus oryzae*, *Aspergillus sojae*, *Aspergillus niger*, *Aspergillus awamori*, *Aspergillus kawachii*,

*Aspergillus parasiticus*, *Aspergillus flavus*, *Aspergillus nomius*, *Aspergillus fumigatus*, and *Aspergillus nidulans*.

15. A process for producing a protein hydrolysate, which comprises adding the polypeptide according to claim 1 and a protein hydrolase to a raw material containing a protein, and degrading the protein.

16. A process for producing a protein hydrolysate, which comprises adding a culture containing the polypeptide according to claim 1 which is obtained by culturing a microorganism having an ability to produce the polypeptide according to claim 1 in a medium, or a treated product thereof, and a protein hydrolase, to a raw material containing a protein, and degrading the protein.

17. The process according to claim 16, wherein the microorganism is the transformant according to claim 9.

18. The process according to claim 16, wherein the microorganism is filamentous fungus.

19. The process according to claim 18, wherein the filamentous fungus belongs to one genus selected from a group consisting of *Aspergillus*, *Penicillium*, *Humicola*, *Trichoderma*, *Mucor*, and *Fusarium*.

20. The process according to claim 19, wherein the filamentous fungus belonging to *Aspergillus* belongs to one species selected from a group consisting of *Aspergillus oryzae*, *Aspergillus sojae*, *Aspergillus niger*, *Aspergillus awamori*, *Aspergillus kawachii*, *Aspergillus parasiticus*, *Aspergillus flavus*, *Aspergillus nomius*, *Aspergillus fumigatus*, and *Aspergillus nidulans*.

21. A protein hydrolysate which is produced by the process according to any one of claims 15 to 20.

22. An antibody which specifically binds to the polypeptide according to claim 1.

23. A method of detecting or quantifying the polypeptide according to claim 1 which comprises using the antibody according to claim 22.